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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,357	12/20/2001	Kwang-Wook Kim	101190-00022	3447
7590 : 04/06/2004			EXAMINER	
AREN'T FOX KINTNER PLOTKIN & KAHN, PLLC			CULBERT, ROBERTS P	
Suite 600			ART UNIT	
1050 Connecticut Avenue, N.W.			PAPER NUMBER	
Washington, DC 20036-5339			1763	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/022,357	KIM ET AL.	
	Examiner	Art Unit	
	Roberts Culbert	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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## DETAILED ACTION

### ***Response to Arguments***

Applicant's arguments filed 3/26/04 have been fully considered but they are not persuasive.

Applicant has argued that the disclosure of applicant shows unexpected results since *"decomposition efficiency of organic substances by the oxide anode is increased by 50 to 100% because the oxide anode is manufactured at 600 to 700°C, which is higher than a conventional sintering temperature range..."* The argument is not persuasive because the disclosure of Beer teaches sintering at a temperature of 400-650°C, which overlaps applicant's cited range. No evidence is provided that would suggest that the electrode of Beer would not possess the same properties at this temperature. For example Beer teaches processing times as high as 50 min, and temperatures as high as 650°. There is no evidence that the advantages suggested by applicant would be unexpected over the invention of Beer at a temperature of 600° and a processing time of 1 hour as claimed by applicant.

Further, in response to applicant's argument that the disclosure of applicant teaches the advantages of high-temperature sintering, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

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owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent No. 1,480,807 to Beer.**

Beer teaches a method for manufacturing a catalytic oxide anode of RuO<sub>2</sub> or IrO<sub>2</sub> using high temperature sintering, wherein a titanium base metal is etched with hydrochloric acid (See Examples 1-7), followed by being coated with a solution of RuCl<sub>3</sub> or chlorides of IrO<sub>3</sub> in hydrochloric acid (See Examples 1-7) according to a brushing or dipping method (Page 1, Lines 46-48) and then the resulting material is dried at 80-120°C, thermally treated at 175 to 300°C, and finally sintered at 400 to 650°C. (Page 2, Lines 1-13)

Beer does not teach that the heating process is performed at 60°C for 10 min, 250-350°C for 10 min and 600-700°C for 1-2 hours.

However, changes in temperature, concentrations, or other process conditions of an old process, do not impart patentability unless the recited changes are critical, i.e., they produce a new and unexpected result. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See MPEP 2144.05.

A person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify the teachings of Beer by using different processing parameters because same were known to be cause effective variables and routine experimentation would have been expected to optimize them. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Regarding Claim 2, Beer teaches a method for manufacturing a catalytic oxide anode of RuO<sub>2</sub> or IrO<sub>2</sub> using high temperature sintering, wherein a TiO<sub>2</sub>-screening layer is formed between a titanium

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support and a surface of the oxide anode, sintered at a temperature of 400 to 650°C (Page 3, Lines 106-108), coated with a solution of  $\text{RuCl}_3$  or chlorides of  $\text{IrO}_3$  in hydrochloric acid according to a brushing or dipping method (Page 3, Lines 125-127) and then the resulting material is dried at 80-120°C, thermally treated at 175 to 300°C, and finally sintered at 400 to 650°C, said  $\text{TiO}_2$ -screening layer serving as a valve metal oxide for preventing the activity of the anode from being lowered owing to the oxidation of a titanium base metal caused upon sintering of the anode at high temperatures and the solid diffusion of an oxide into the anode surface, said valve forming oxide being selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SnO}_2$ ,  $\text{RuO}_2$ , and  $\text{IrO}_2$  sintered at 450 to 550°C. (See Example 6)

Beer does not teach that the heating process is performed at 60°C for 10 min, 250-350°C for 10 min and 600-700°C for 1-2 hours.

However, changes in temperature, concentrations, or other process conditions of an old process, do not impart patentability unless the recited changes are critical, i.e., they produce a new and unexpected result. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See MPEP 2144.05.

A person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify the teachings of Beer by using different processing parameters because same were known to be cause effective variables and routine experimentation would have been expected to optimize them. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Beer does not explicitly teach that the purpose of the  $\text{TiO}_2$ -screening layer is to serve as a valve metal oxide for preventing the activity of the anode from being lowered owing to the oxidation of a titanium base metal caused upon sintering of the anode at high temperatures and the solid diffusion of an oxide into the anode surface.

However it may be assumed that the  $\text{TiO}_2$  layer of Beer serves the same purpose as the claimed invention since the sintering temperature range is the same, the layer materials are the same, and the  $\text{TiO}_2$ -screening layer is formed between the titanium surface and the subsequently formed platinum metal oxide such as ruthenium oxide. (See Example 6.)

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**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Culbert



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